MEMORANDUM

DATE: June 1, 1983

TO: Warner Reeser
Glen Lane
Robert Siek

FROM: Gary E. Parker GEP
John Blueyes JB

SUBJECT: T.A. 38-675: Jackpile-Paguate Reclamation Plan

Confidential Claim Retracted
Authorized by: JC
Date: 6/12/13

A meeting between CERT staff and members of the Natural Resource Committee of the Pueblo of Laguna (see attached list) was held on May 25, 1983 to discuss three studies recently submitted to CERT for review:

- Highwall Slope Stability in the North Paguate area;
- Evaluation of Hydrologic Effects Resulting from Pit Backfilling at the Jackpile-Paguate Uranium Mine; and
- Radiological Impacts of the Jackpile-Paguate Uranium Mine.

CERT staff had not had time to adequately review the documents and, thus, only tentative comments and concerns could be presented during the meeting. The tribe will be meeting with Anaconda on June 9, 1983 and the issues covered by the aforementioned reports will be discussed. The tribe would like our input prior to that date.

Both the highwall stability and hydrologic effects reports were prepared for Anaconda by consultants. An independent evaluation of the hydrology of the mine area is being prepared for the BLM (formerly MMS), but likely will not be available prior to the June 9 meeting. The radiological impacts report was prepared by Argonne National Laboratory.

The highwall stability report concluded that the North Paguate pit highwall is and would remain stable even at the reported slope angles as high as 60° (the typical slope characteristics are reported to be 130 feet high at a 45° angle). Groundwater was not considered a factor since the water level would "be below the lowermost portion of the highwall. Therefore, no pressurization effects on highwall stability should occur." The highwall stability study was completed prior to the hydrology report prepared by Dames and Moore. Consequently, the estimated higher water recovery levels in the north pit area were not considered. However, the highwall stability likely would not be reduced because backfill would be above the water recovery level and, as noted above, the groundwater level would be below the lowermost portion of the highwall. Our expertise to evaluate the technical components of the report is limited. However, intuitively the highwalls would generally be stable as they have already been in place over several years, and the naturally formed mesas in the area are characteristic of exposed sandstones and shales forming stable, steep walls.

It is suggested that the tribe's desire and argument for having the North and South Paguate Pits backfilled (or at least having the highwall slopes reduced) should be based upon: (1) the fact that a highwall did not exist prior to mining and materials are available to fully backfill the pits; (2) the proximity of a portion of the North pit highwall to the main access road to the village of Paguate and, thus, concern is not about highwall stability but rather safety; and/or (3) highwall stability is not the sole criterion for suitable (acceptable) reclamation. The hydrologic evaluation implies that water recovery in the north pit will be about 25 feet higher than originally estimated which, thus, raises the required backfill in the North Paguate pit by that amount. Even with increased backfill as projected, high and steep highwalls will remain.

The hydrologic effects report concludes that the groundwater recovery levels will be well below the previously projected levels except for the North Paguate pit where recovery levels are projected to be about 25 feet higher than previously projected. It is implied in the report that the backfill level, thus, can be reduced correspondingly. If further evaluation of the report determines that the lower groundwater recovery levels, except as noted for the North Pit, are reasonable, the tribe should be cautioned that the reclamation plan as written does not specify a numerical backfill elevation, but rather relates the backfill elevation to three feet above the groundwater recovery level. The hydrologic effects report indicates less backfill would be needed to meet the final backfill elevation.

Glen was in the process of reviewing the radiological impacts report and was not available for the meeting; thus, the report was not discussed.

All three reports are being reviewed in more detail and appropriate comments will be provided to the tribe.

The tribe, based upon other work being performed by CERT, is presently considering heap leaching to extract the uranium value in select protore stockpiles. These piles are proposed as backfill material in the present reclamation plan. The tribe is aware that such development could complicate discussions on the reclamation plan. However, the tribe recognizes that the opportunity for economic development must be considered.

The tribe has not made a decision whether to pursue uranium heap leaching and expressed concern about the potential environmental impacts associated with such development. The Natural Resource Committee will make a presentation to the tribal council on June 8 and, if possible, would like some preliminary thoughts on the potential environmental impacts of development and preliminary suggestions on candidate sites or site criteria within or around the mine area.

Should the tribe elect to pursue development it would like assistance in evaluating the environmental impacts of development, and licensing and permitting activities. A new technical assistance request will be required.

The tribe would also like information on the procedural steps involved in developing a heap leaching operation relative to the basic steps stated by MMI (heap leaching consultant). The basic steps stated by MMI are:

1. Bench Test: 30-60 days at a cost of $1,500-$2,000;

2. PDE (Preliminary Design & Engineering): 60-90 days at a cost of $12,000; and

3. Project Development: one year at a cost of $500,000-$1,000,000 including:

   - Pilot Plant Process: 90 days at a cost of $50,000;
   - starting engineering and design; and
   - permitting and licensing.

ATTENDEES

MEETING AT CERT OFFICES
May 25, 1983

Pueblo of Laguna Natural Resource Committee
and
CERT Office of Environmental Analysis

Name	Title
Daniel Carr	Natural Resource Manager, Laguna Agency
Tim Analla	Natural Resource Committee, Pueblo of Laguna
Vincenti Pedro, Sr.	Natural Resources Committee, Pueblo of Laguna
Phillip Gaco	Councilman, Natural Resource Committee, Pueblo of Laguna
Lester Arkie	Pueblo of Laguna
Michael A. Lucero	Councilman, Pueblo of Laguna
Lawrence Silva	Councilman, Pueblo of Laguna
Gary E. Parker	CERT
John Blueyes	CERT
Del Begay	Natural Resource Committee, Pueblo of Laguna
Ron Solimon	Legal Assistant, Pueblo of Laguna
Edwin Martinez	Governor, Pueblo of Laguna